



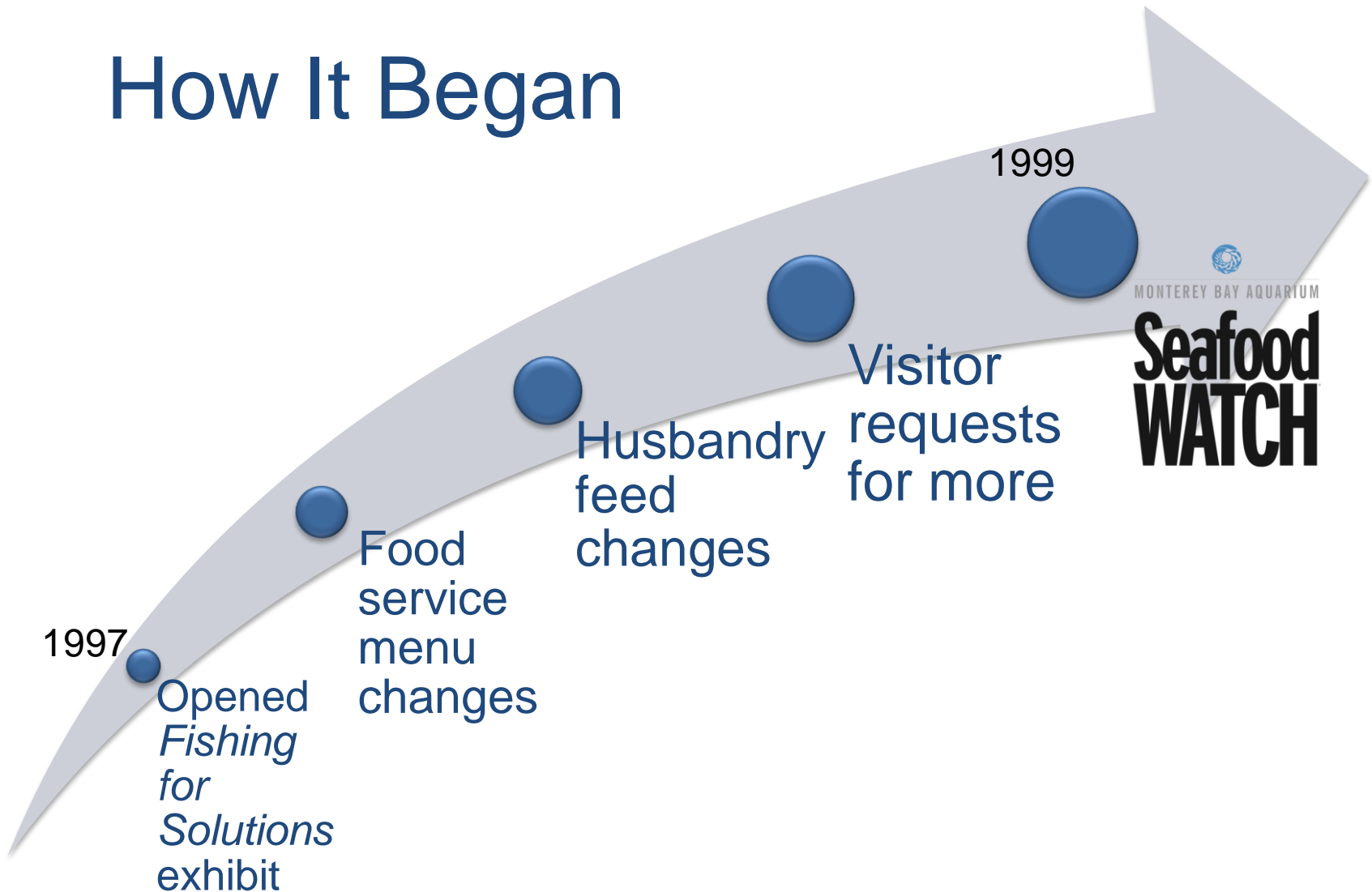
Monterey Bay Aquarium Seafood Watch

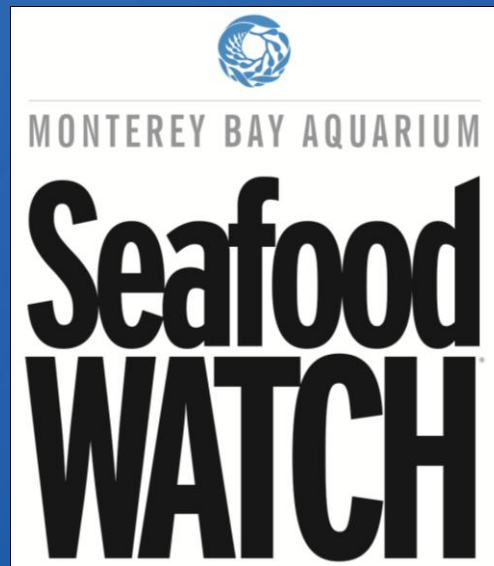
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Fisheries Research Manager

May 11, 2011

MONTEREY BAY AQUARIUM

How It Began

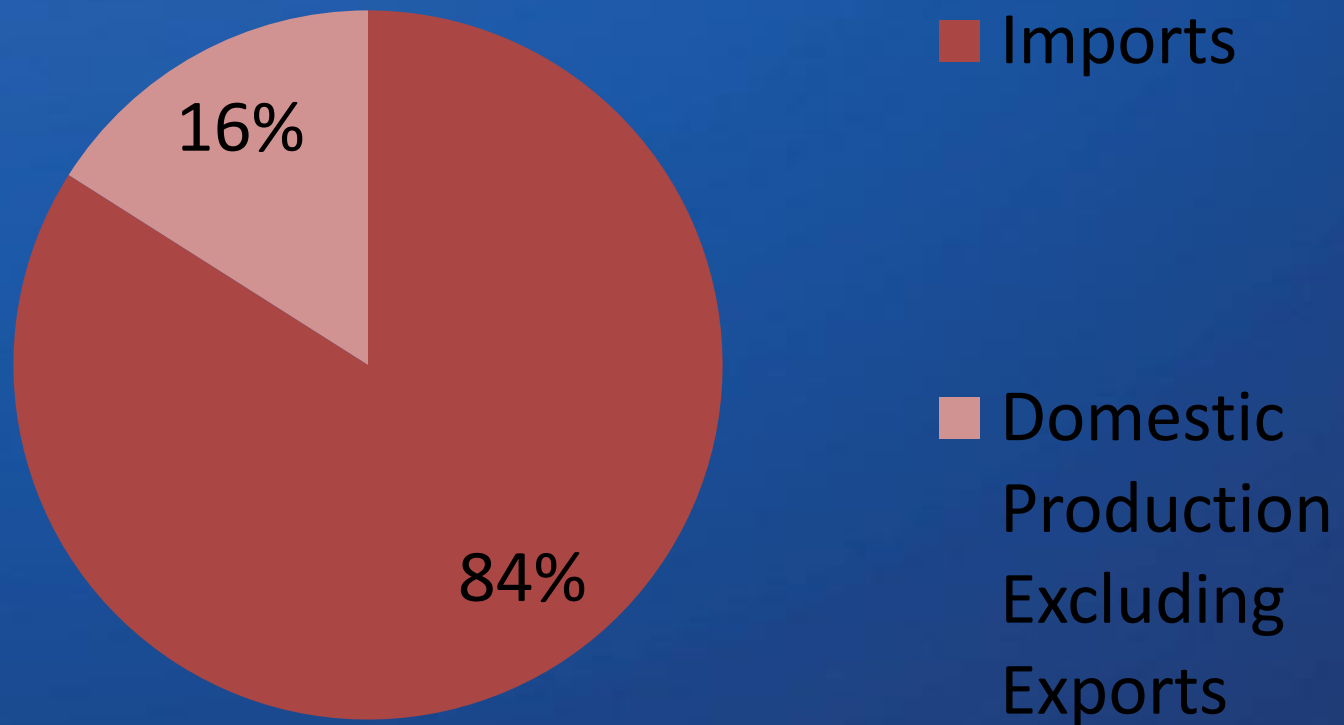




Helping consumers and businesses
make choices for **healthy oceans**
through recommendations of
"**Best Choice**," "**Good Alternative**" and "**Avoid**"
for seafood items

Global Trends: Imported vs. Domestic

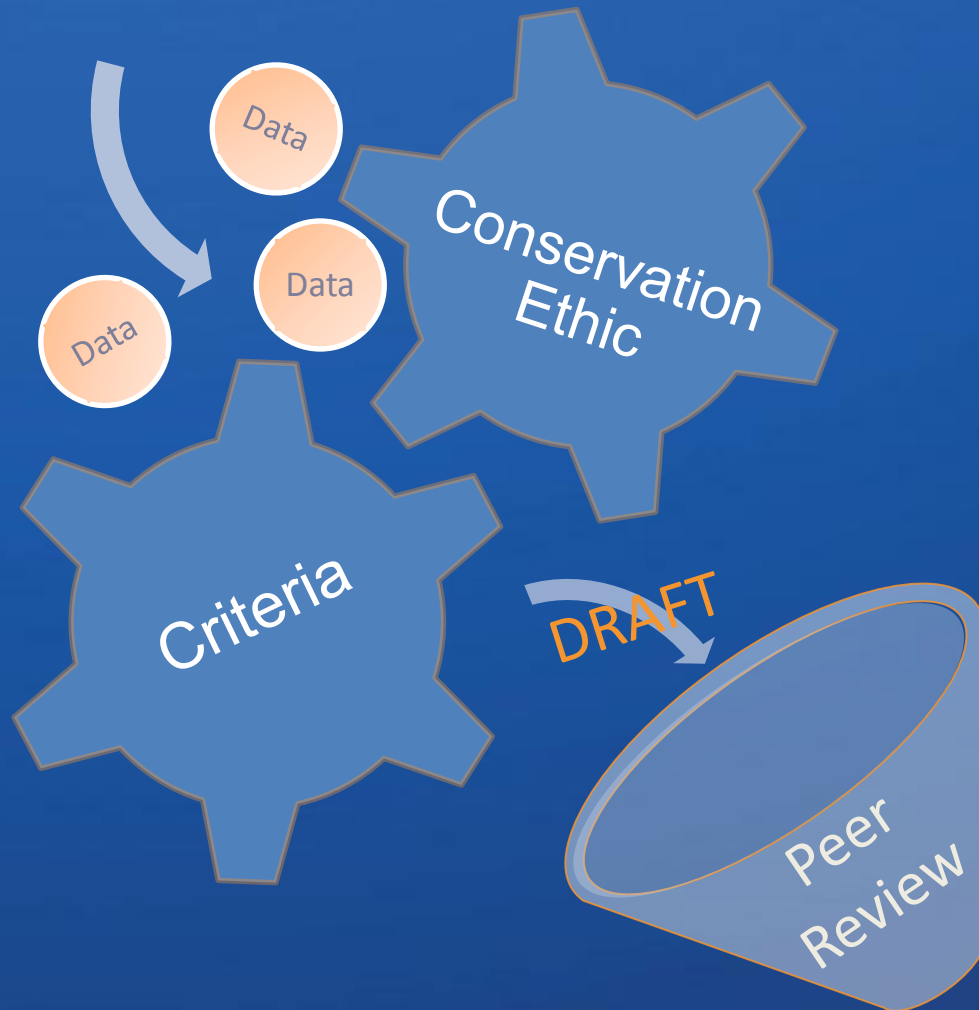
Seafood Consumed in U.S.



Seafood Watch Science

- Independent 3rd party
- Transparent, scientific methodology
- Thorough scientific report
- Peer reviewed
- All data referenced
- Regularly updated

Methodology



**Seafood Watch
recommendation**



MONTEREY BAY AQUARIUM

Criteria for Assessments

WILD-CAPTURE FISHERIES

Inherent vulnerability

- Age at 1st maturity
- Reproductive potential
- Lifespan

Stock status

- Health of current fish stocks
- Occurrence of overfishing
- Trends in population abundance

Bycatch

- Quantity relative to targeted landings
- Species of special concern
- Population consequences

Habitat & ecosystem effects

- Impacts to sea floor
- Ecosystem alteration

Fisheries management

- TAC
- Scientific monitoring & data collection
- Bycatch reduction plan
- Enforcement and mitigation of destructive gear




Criteria for Assessments

CRITERION 3: NATURE AND EXTENT OF DISCARDED BYCATCH⁴




Guiding Principle: A sustainable wild-caught species is captured using techniques that minimize the catch of unwanted and/or unmarketable species.

Primary Factors to evaluate



Quantity of bycatch, including any species of “special concern” (i.e. those identified as “endangered”, “threatened” or “protected” under state, federal or international law)

- Quantity of bycatch is low (< 10% of targeted landings on a per number basis) AND does not regularly include species of special concern 
- Quantity of bycatch is moderate (10 – 100% of targeted landings on a per number basis) AND does not regularly include species of special concern OR Unknown 
- Quantity of bycatch is high (> 100% of targeted landings on a per number basis) OR bycatch regularly includes threatened, endangered or protected species 

Population consequences of bycatch

- Low: Evidence indicates quantity of bycatch has little or no impact on population levels 
- Moderate: Conflicting evidence of population consequences of bycatch OR Unknown 
- Severe: Evidence indicates quantity of bycatch is a contributing factor in driving one or more bycatch species toward extinction OR is a contributing factor in limiting the recovery of a species of “special concern” 

Trend in bycatch interaction rates (adjusting for changes in abundance of bycatch species) as a result of management measures (including fishing seasons, protected areas and gear innovations):

- Trend in bycatch interaction rates is down 
- Trend in bycatch interaction rates is flat OR Unknown 

Criteria for Assessments

WILD-CAPTURE FISHERIES

Evaluation Guidelines

Bycatch is “**Minimal**” if:

- 1) Quantity of bycatch is <10% of targeted landings AND bycatch has little or no impact on population levels.

Bycatch is “**Moderate**” if:

- 1) Quantity of bycatch is 10 - 100% of targeted landings
- 2) Bycatch regularly includes species of “special concern” AND bycatch has little or no impact on the bycatch population levels AND the trend in bycatch interaction rates is not up.

Bycatch is “**Severe**” if:

- 1) Quantity of bycatch is > 100% of targeted landings
- 2) Bycatch regularly includes species of “special concern” AND evidence indicates bycatch rate is a contributing factor toward extinction or limiting recovery AND trend in bycatch is down.

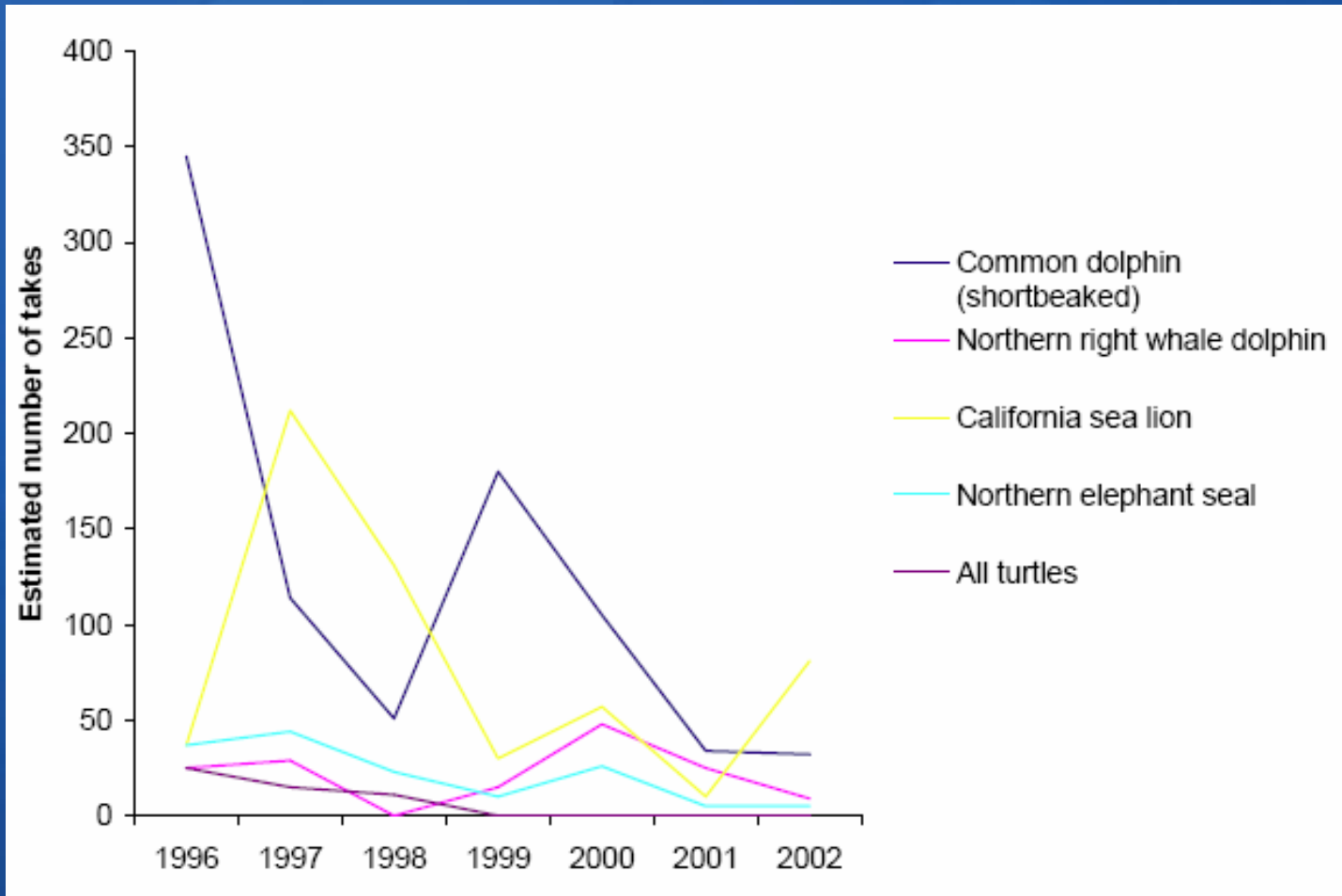
Bycatch is considered a **Critical Conservation Concern** and the species is ranked “Avoid”, regardless of other criteria, if:

- 1) Bycatch regularly includes species of special concern AND evidence indicates bycatch rate is a factor contributing to extinction or limiting recovery AND trend in bycatch interaction rates is not down.
- 2) Quantity of bycatch is high AND studies show evidence of substantial ecosystem impacts.

What Drives Swordfish Rankings?

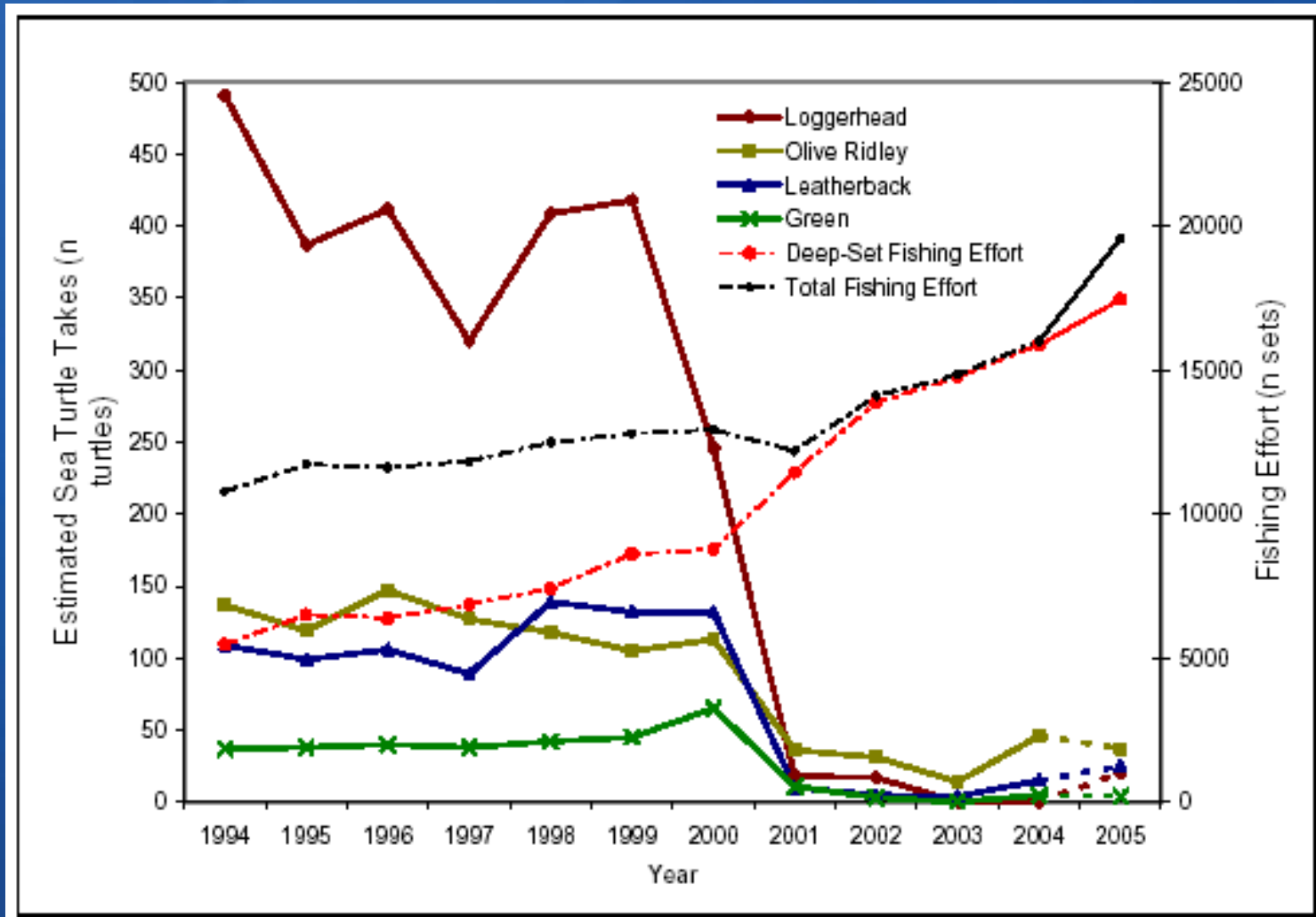
- Bycatch in DGNs and longlines worldwide
- US regulations dramatically reduce bycatch
 - Closed areas, pingers, etc.
- Harpoon and handline highly selective

Bycatch in California drift gillnet fishery



Data from Caretta et al. 2005

Bycatch in Hawaii Longline Fishery



Data from NMFS 2005

Bycatch in Hawaii Longline Fishery

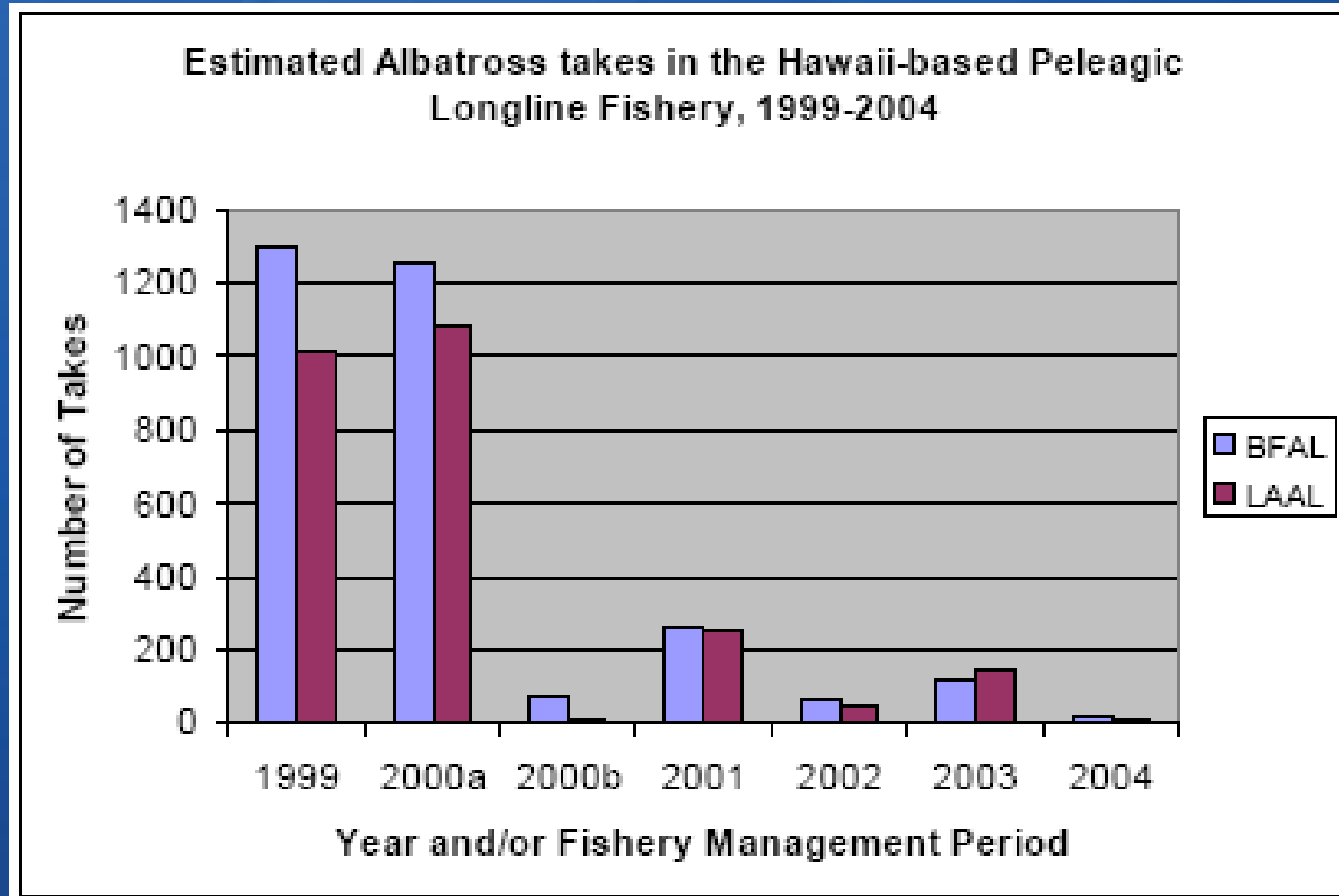


Figure from PIRO 2005

Determining the Recommendation

	Conservation Concern			
Sustainability Criteria	Low	Moderate	High	Critical
Inherent Vulnerability	✓			
Status of Stocks	✓ Eastern Pacific			
Nature of Bycatch	✓ Harpoon			
Habitat & Ecosystem Effects	✓ Harpoon			
Management Effectiveness	✓ U.S. Canada			

U.S. Pacific Harpoon Fishery = Best Choice

Determining the Recommendation

	Conservation Concern			
Sustainability Criteria	Low	Moderate	High	Critical
Inherent Vulnerability	✓			
Status of Stocks	✓ Eastern Pacific			
Nature of Bycatch			✓ California drift gillnet	
Habitat & Ecosystem Effects	✓ Drift gillnet			
Management Effectiveness	✓ U.S. Canada			

California Drift Gillnet Fishery = Good Alternative

Determining the Recommendation

	Conservation Concern			
Sustainability Criteria	Low	Moderate	High	Critical
Inherent Vulnerability	✓			
Status of Stocks	✓ Eastern Pacific			
Nature of Bycatch				✓ International longline
Habitat & Ecosystem Effects		✓ Longline		
Management Effectiveness		✓ International EPO		

International Longline Fishery = Avoid

Seafood Watch® Recommendation	Where Caught and Gear Used
Best Choices	Harpoon or handline (US and Canada, EPO and N. Atlantic)
Good Alternatives	California drift gillnet
	Harpoon or handline (International)
	U.S. Atlantic and Hawaii longline
Avoid	International longline
	South American drift gillnet
	Mediterranean (all gears)

Website Resources

EREY BAY AQUARIUM Hours & Calendar | Teachers | Membership | Donate Now | Español

ANIMALS & ACTIVITIES SAVE THE OCEANS FUN & LEARNING Search

Seafood WATCH

THERE ARE ONLY SO MANY FISH IN THE SEA
The choices we make today will determine the fate of tomorrow's ocean wildlife.

What's New

- Get Your Updated Seafood Watch Pocket Guides
- Learn About the Changes to Our West Coast Salmon Recommendations
- Executive Director Julie Packard on the Gulf Oil Spill
- Sustainable Seafood Recipe for Sicilian Sweet-and-Sour Seared Tuna

Issues & What You Can Do

Fishing practices worldwide are damaging our oceans—depleting fish populations, destroying habitats and polluting the water. Informed consumers can help turn the tide.

Learn about the Issues
Learn What You Can Do
Choose a Pocket Guide

Our Partner Community

Businesses large and small help us build awareness about sustainable seafood. Working together, we're creating a better future for our oceans.

Meet our Partners
Visit our Restaurant Partners

Seafood Recommendations
What to Buy & Why

Enter Seafood Name

Top Searches

- Salmon
- Chilean Seabass
- Mahi Mahi
- Halibut
- Tilapia
- Cod
- Shrimp
- Crab
- Monkfish
- Tuna, Albacore

[Browse all seafood](#)
[Choose a Pocket Guide](#)



SEAFOOD	RATING	MARKET NAMES	WHERE CAUGHT
Swordfish	BEST CHOICE	Broadbill, Emperador, Espada, Shutome	Hawaii
Swordfish	BEST CHOICE	Broadbill, Emperador, Espada, Shutome	U.S., Canada, North Atlantic, East Pacific
Swordfish	GOOD ALTERNATIVE	Broadbill, Emperador, Espada, Shutome	California
Swordfish	GOOD ALTERNATIVE	Broadbill, Emperador, Espada, Shutome	U.S. Atlantic, Hawaii
Swordfish	AVOID	Broadbill, Emperador, Espada, Shutome	Imported

Swordfish

Swordfish is found in most of the world's oceans but not all fisheries in all regions are well-managed. Some of the gears used to catch swordfish accidentally catch other marine life such as sea turtles, seabirds and sharks. Harpoon or handlines are the most environmentally-friendly gears.

and Hawaii, where strict bycatch regulations result in a "Good Alternative" ranking.

Scientific Reports About Our Ratings

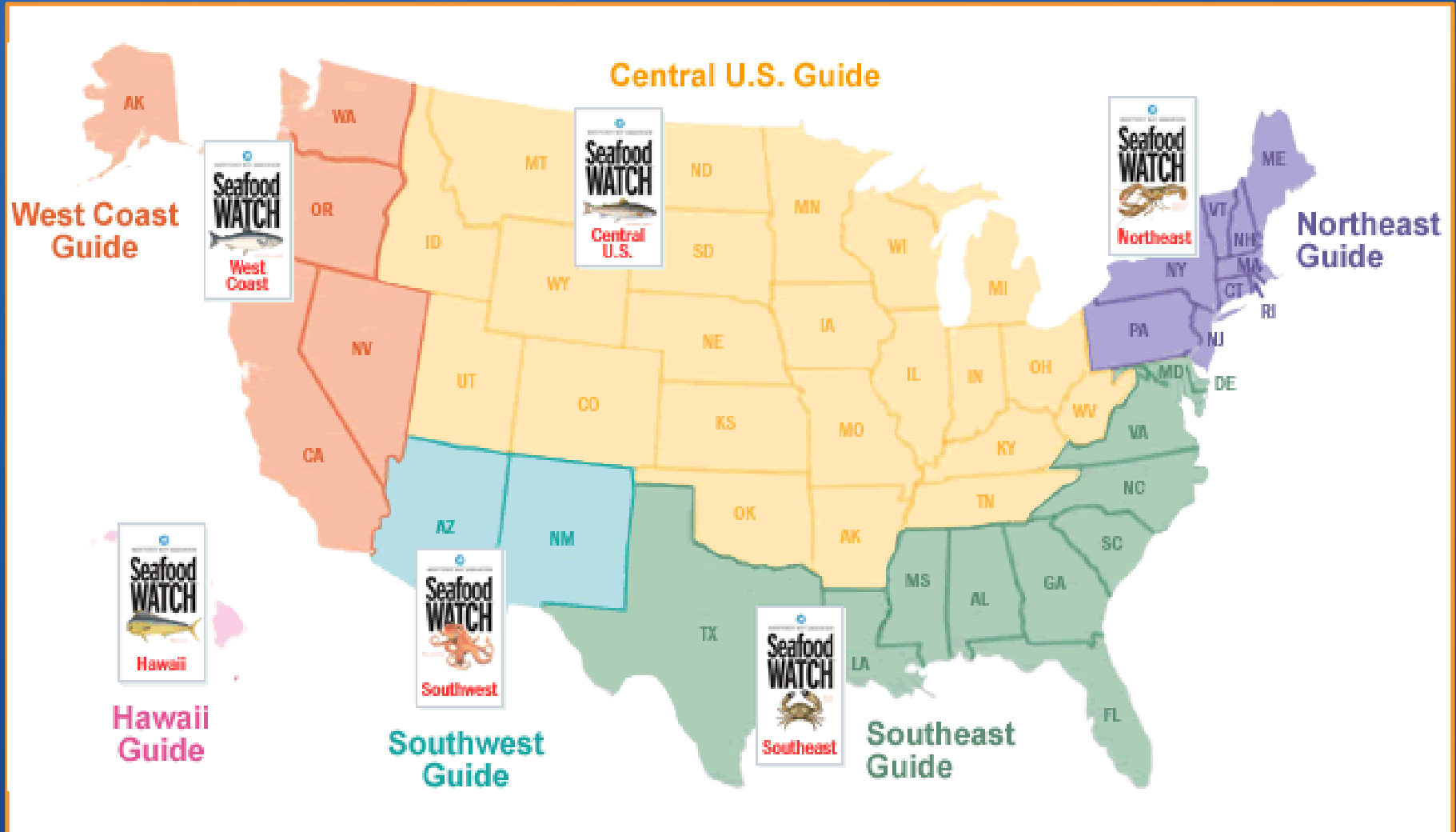
[Longlining Fact Card](#)

[Swordfish Fact Card](#)

[Swordfish Seafood Watch Report](#)



Seafood Watch Outreach



Seafood Watch Outreach



Consumer Awareness and Interest

- Most Americans familiar with “sustainable seafood”
- Safety and health top of mind
- Eating local identified as part of sustainability
- Americans will pay more, favor stores and restaurants with sustainable seafood

Concluding Thoughts

- Detailed SFW recommendations and reports available on web
- Scientific process, criteria and review
- Input from experts always needed
- Consumer awareness, buyer partnerships key to promoting sustainable seafood
- US can stay a leader in sustainability and have healthy fisheries